OBJECTIVE: All chemotherapy regimens are associated with some degree of adverse events. The more severe adverse events require hospitalization and may be associated with high costs. One adverse event that may be serious is infection and in particular infection because of neutropenia. The objective of this study was to retrospectively assess the hospitalization costs of infections and neutropenia in cancer patients. **METHODS:** Individual patient data on costs, diagnoses, and length of stay were collected from the largest cost per patient inpatient database in Sweden. The time period was January 1999 to January 2000. The hospitals included in the database all have a detailed resource tracking and cost assignment system for determining the individual cost per stay. All non-surgical patients who had the combination of a cancer ICD-10 (C000 to C997) and an infection diagnosis recorded in the database were selected. Patients who also had a neutropenia (D709) diagnosis recorded were selected and studied as a subsample of the whole sample. **RESULTS:** There were 2378 patients who had a cancer and an infection diagnosis. Their mean cost was (SEK) 69,700 and the mean length of stay was 12.3 days. The average age was 62 years and there were 59% women. Patients with a principal cancer diagnosis had greater costs than patients with a secondary cancer diagnosis, 85,500 versus 50,600. Out of the 2378 patients there were 52 who had both neutropenia and an infection. Their mean age was 55 years. There were slightly more women than men, 54%. The mean cost was (SEK) 77,900 and the mean length of stay was 12.9 days. **CONCLUSIONS:** The hospitalization costs of infections and neutropenia in cancer patients are significant. When assessing the costs of chemotherapy treatments, not only pharmaceutical costs, but also costs of adverse events should be included.

PCN7

THE LIFETIME COST OF GEFITINIB ("IRESSA") IN TREATING PATIENTS WITH NON-SMALL-CELL LUNG CANCER (NSCLC)

Haiderali A[1], Chin W[2]
[1]AstraZeneca Canada Inc, Mississauga, Ontario, Canada; [2]Axia Research Inc, Salt Lake City, UT, USA

OBJECTIVES: The objective of this study was to determine the lifetime cost of treating NSCLC patients with gefitinib. NSCLC is a fatal malignancy that responds poorly to chemotherapy. Best Supportive Care (BSC) is frequently offered when management with anticancer treatments is not feasible. Gefitinib ("Iressa") is the first epidermal growth factor receptor tyrosine kinase inhibitor approved for the treatment of patients with locally advanced or metastatic NSCLC. **METHODS:** Duration of gefitinib treatment was estimated by the time to progression in IDEAL 2, a phase II clinical trial involving patients with advanced or metastatic NSCLC who had previously received platinum-based chemotherapy. Post progression, patients were assumed to receive BSC. Resource utilization was estimated from the clinical trial. The cost of BSC following chemotherapy was provided by CancerCare Manitoba. Costs were expressed in Canadian dollars (2003). **RESULTS:** Patients (n = 102) received gefitinib 250 mg daily. Over 40% of patients achieved a complete response, partial response or stable disease, and clinically significant improvement in disease-related symptoms occurred in most of these patients. Median time to progression was 1.9 months. The median survival time was 7 months. The tolerability profile of gefitinib was mild and there was a low incidence of grade 3/4 adverse reactions. The lifetime cost of treating a patient with gefitinib plus BSC was estimated at $14,496. In sensitivity analyses, that lifetime cost ranged from $13,822 up to $24,915. CONLCUSIONS: The lifetime cost to treat a patient with gefitinib plus BSC was $14,496, which is comparable to costs for other chemotherapies for NSCLC. For example, the lifetime cost of second-line docetaxel was $17,739 (1999 dollars [$19,389 in 2003 dollars]) and for other chemotherapies, lifetime costs ranged from $24,828 up to $41,178 (1995 dollars [$29,059 to $48,196 in 2003 dollars]). "Iressa" is a trademark of the AstraZeneca group of companies.

PCN8

COST-EFFECTIVENESS ANALYSIS OF ORAL IBANDRONATE VERSUS IV ZOLEDRONIC ACID OR IV GENERIC PAMIDRONATE FOR BONE METASTASES FROM BREAST CANCER IN PATIENTS RECEIVING ORAL HORMONAL THERAPY IN THE UK

De Cock E[1], Hutton J[1], Barrett-Lee P[2], Canney P[3], Body JJ[4], Neary M[5], Lewis GJ[6]
[1]MEDTAP International Inc, London, UK; [2]Velindre Cancer Centre, Cardiff, UK; [3]Western Hospital, Glasgow, UK; [4]Université Libre de Bruxelles, Brussels, Belgium; [5]Hoffmann-La Roche Inc, Nutley, NJ, USA; [6]Roche Products Limited, Welwyn Garden City, Herts, UK

OBJECTIVES: Oral ibandronate (ibandronic acid) is a bisphosphonate approved in the UK for treatment of bone metastases from breast cancer. Administration of oral ibandronate once-daily can be easily combined with oral hormonal therapy, saving costs of iv bisphosphonate administration and monitoring. We used cost-effectiveness (C/E) modelling to compare oral ibandronate with iv zoledronic acid or iv generic pamidronate in this setting. **METHODS:** The model assumed a UK NHS perspective with a duration of 14.3 months (expected average survival). Patients were assumed to receive oral hormonal therapy for 53% of their survival. Primary outcomes were direct Health Care costs and QALYs. Resource use data for iv bisphosphonates came from a published micro-costing study (validated through review by a UK clinician); costs were calculated using a unit cost database. Monthly drug acquisition costs were £195 for oral ibandronate and iv zoledronic acid, and £165 for iv generic pamidronate. The cost of managing skeletal-related events (SREs) came from a published study. Renal adverse events with monitoring and treatment costs were assumed for zoledonic acid. Efficacy was calculated as the relative risk reduction (RR) of SREs; utility scores were applied to time with/without an SRE (SRE duration assumed 1 month). **RESULTS:** The projected total cost was £297 less/patient with oral ibandronate than with zoledronic acid, and £1087 less than with generic pamidronate. Oral ibandronate led to a gain of 0.02 QALYs (due to SRE RR and bone pain relief), making it the economically dominant treatment option. For completeness, C/E results for iv ibandronate will also be presented, demonstrating C/E. **CONCLUSIONS:** This study demonstrated the use of C/E modelling to compare oral versus iv bisphosphonates using published data validated by expert clinician review. Oral ibandronate was found to be cost-effective for the management of bone metastases from breast cancer in patients receiving oral hormonal therapy.

PCN9

A TIME-IN-MOTION STUDY OF ORAL IBANDRONATE VERSUS IV ZOLEDRONIC ACID FOR THE TREATMENT OF METASTATIC BONE DISEASE IN BREAST CANCER PATIENTS IN THE UK

Wardley A[1], Body JJ[2], Neary M[3], Lewis G[4]
[1]Christie Hospital, Manchester, UK; [2]Université Libre de Bruxelles, Brussels, Belgium; [3]Hoffmann-La Roche Inc, Nutley, NJ, USA; [4]Roche Products Limited, Welwyn Garden City, Herts, UK

OBJECTIVES: Oral bisphosphonates should reduce medical resource use versus iv infusions. A US study used time-in-motion methods to assess resource use for iv zoledronic acid vs. iv pamidronate (DesHarnais CL et al, Support Care Cancer 2001).

We used time-in-motion methods in a pharmacoeconomic substudy to a clinical trial to estimate differences in resource use and costs between oral ibandronate (ibandronic acid) and iv zoledronic acid. **METHODS:** At the Week 8 study visit, administration, monitoring and the treatment of drug-related adverse events were recorded in patients receiving oral ibandronate 50 mg/day (n = 4) or iv zoledronic acid 4mg every 3–4 weeks (n = 5) at 2 centres in the UK. No patients were receiving iv chemotherapy. Data was collected using a detailed nurse worksheet (diary), designed and pilot-tested in one center. Total use of infusion supplies, medications, laboratory tests, procedures, staff time and total time in the clinic were also recorded. **RESULTS:** Administration of iv zoledronic acid required >1.5 hours more clinic time per visit and approximately 1 hour more clinician and nurse time than oral ibandronate, due to infusion time and patient monitoring. Over a 12-month period, the additional clinician and nurse time required for iv zoledronic acid administration would be about 16 hours more than with oral ibandronate, and there would be about 36 additional clinic hours, including 28 hours for iv preparation and infusion alone. Details on medical resource use for infusion-related supplies, medications, laboratory tests will be presented. **CONCLUSIONS:** Oral ibandronate reduced the burden on health care professionals, giving staff more time to treat patients, increasing productivity. The absence of iv administration also frees patient beds and improves capacity within health care systems. The potential benefits will be greatest for patients receiving oral anticancer therapies, or those who have completed iv chemotherapy.

PCN10

COST-EFFECTIVENESS-ANALYSIS OF BREAST CANCER DIAGNOSIS WITH CAD (COMPUTER AIDED DETECTION)

Heinen-Kammerer T, Motzkat K, Rychlik R

Institute of Empirical Health Economics, Burscheid, Germany

OBJECTIVES: To analyse the cost-effectiveness of CAD in breast cancer diagnostic in comparison to normal procedure from the perspective of statutory health insurance (SHI). **METHODS:** To compare the effectiveness with and without CAD, total costs of diagnostic measures were calculated by a Markov-model. Model structure, transition possibilities, procedures within therapies and complications were ascertained by a Delphi-panel. Subsequently, costs of therapy per patient with and without CAD were calculated. Fur-thermore, costs of successive therapy of undetected cancer without CAD were consid-ered. Based on literature, an increase of 19.5% in detecting breast cancer with CAD was determined. Moreover the assumption was made, that with CAD 19.5% of cancers could be detected at an earlier stage. **RESULTS:** Based on perspective of the SHI, diagnostic and therapy of 10,000 mammography patients from the Markov-cohort caused total costs in amount of 2,298,048€ without CAD (229.80€ per patient) and 2,352,635€ with CAD (235.26€ per patient). By consideration of the effectiveness parameter (number of detected breast cancers per 10,000 patients, 0.01912 without CAD, 0.02285 with CAD), the effectiveness-adjusted costs amounted to: without CAD 12,019€, with CAD 10,296€. Thus, the implementation of CAD proves to be more cost-effective due to a higher sensitivity of the diagnostic procedure.Subsequently, two sensitivity-analyses were conducted to test robustness of this model for cost effectiveness and for costs per patient relative to the price for CAD. **CONCLUSIONS:** Diagnosis costs per patient are higher with CAD compared to normal procedure. However, more breast cancers can be detected and treated at an earlier stage. Therapeutic costs per patient are lower; therefore implementation of CAD is more cost-effective. As far as Germany is concerned, 2.691 additional breast cancers can be detected every year if CAD would be included in breast cancer diagnosis.

PCN11

COST-EFFECTIVENESS OF ORAL IBANDRONATE VERSUS IV ZOLEDRONIC ACID OR IV PAMIDRONATE IN THE TREATMENT OF BREAST CANCER WITH BONE METASTASES IN PATIENTS UNDERGOING IV CHEMOTHERAPY IN THE UK

De Cock E[1], Hutton J[1], Barrett-Lee P[2], Canney P[3], Body JJ[4], Neary M[5], Lewis GJ[6]

[1]MEDTAP International Inc, London, UK; [2]Velindre Cancer Centre, Cardiff, UK; [3]Western Hospital, Glasgow, UK; [4]Université Libre de Bruxelles, Brussels, Belgium; [5]Hoffmann-La Roche Inc, Nutley, NJ, USA; [6]Roche Products Limited, Welwyn Garden City, Herts, UK

OBJECTIVES: Cost-effectiveness (C/E) studies of oral vs iv regimens are important, with the availability of oral regimens having "iv efficacy", and some iv regimens being available as generics. C/E of oral ibandronate (ibandronic acid) versus iv zoledronic acid or iv generic pamidronate was assessed in breast cancer patients with metastatic bone disease undergoing iv chemotherapy. **METHODS:** The model assumed a UK NHS perspective, 14.3 months expected average survival, concurrent iv chemotherapy lasting 4 months, and specified probabilities for bisphosphonate discontinuation. Primary outcomes were direct Health Care costs and QALYs. Resource use for iv bisphosphonates was obtained from a published micro-costing study (validated by UK clinician); the cost of managing skeletal-related events (SREs) came from published literature. Other costs were calculated using a unit cost database. Monthly drug costs were £195 for oral ibandronate and iv zoledronic acid, and £165 for iv generic pamidronate. Renal AEs with monitoring and treatment costs were assumed for zoledonic acid. Efficacy was assessed as the relative risk reduction (RR) of SREs (assuming SRE duration of 1 month). Utilities were applied to time with/without SRE, to adjust survival for patient QOL. **RESULTS:** Projected total cost (including drug) was £386 less/patient for oral ibandronate than for zoledronic acid, and £1171 less/patient than for generic pamidronate. Due to SRE RR and pain relief, oral ibandronate gained 0.02 QALYs, making it the economically dominant option versus zoledronic acid or generic pamidronate. For completeness, C/E results for iv ibandronate will also be presented, demonstrating C/E. **CONCLUSIONS:** Oral ibandronate was highly cost-effective compared with either iv zoledronic acid or generic pamidronate. The efficacy of oral ibandronate in preventing SREs and sustaining relief from metastatic bone pain is likely to lead to QALY gains, with cost savings due to reduced Health Care staff time for treatment of SREs, bisphosphonate administration, and patient monitoring.

PCN12

COST EFFECTIVENESS OF AN ASPIRIN CHEMOPREVENTION AND/OR COLONOSCOPIC SURVEILLANCE IN THE COLORECTAL CANCER

Gerlier L[1], Launois R[1], Deyra J[2], Traissac L[3], Chaussade S[4], Benamouzig R[3]

[1]REES France, Paris, France; [2]APACC, Paris, France; [3]Hôpital Avicenne, Bobigny, France; [4]Hôpital Cochin, Paris, France

OBJECTIVES: To compare the medical and economical impact of four strategies in the prevention of colorectal cancer (CRC) in France: 1) no treatment no surveillance; 2) chemoprevention with 325 mg daily aspirin; 3) colonoscopic surveillance with a 3, 5 or 10-year periodicity according to recent guidelines; and 4) a combination of the two latter ones. **METHODS:** A Markov decision model was built, following a fictive 50-year-old cohort